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## NOTICE OF ALLOWANCE AND FEE(S) DUE

36183

7590

05/15/2009

PAUL, HASTINGS, JANOFKY & WALKER LLP  
875 15th Street, NW  
Washington, DC 20005

EXAMINER

RICHER, AARON M

ART UNIT

PAPER NUMBER

2628

DATE MAILED: 05/15/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,529	01/08/2007	Masaaki Oka	524168-0350181(SU20031-US	9408

TITLE OF INVENTION: IMAGE PROCESSOR AND METHOD, COMPUTER PROGRAM, AND RECORDING MEDIUM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	08/17/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

## HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to:** Mail **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax** **(571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

36183 7590 05/15/2009

**PAUL, HASTINGS, JANOFKY & WALKER LLP**  
**875 15th Street, NW**  
**Washington, DC 20005**

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/575,529 01/08/2007

Masaaki Oka

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**TITLE OF INVENTION: IMAGE PROCESSOR AND METHOD, COMPUTER PROGRAM, AND RECORDING MEDIUM**

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional

NO

\$1510

\$300

\$0

\$1810

08/17/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
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RICHER, AARON M

2628

345-441000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

1

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2

3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

**PLEASE NOTE:** Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY AND STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

**NOTE:** The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_  
Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 52 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 52 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

**Notice of Allowability****Application No.**

10/575,529

**Applicant(s)**

OKA, MASAOKI

**Examiner**

AARON M. RICHER

**Art Unit**

2628

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed April 24, 2009.
2. ☒ The allowed claim(s) is/are 1,3,5-13 and 16.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

/Aaron M Richer/  
Examiner, Art Unit 2628

**DETAILED ACTION**

***Allowable Subject Matter***

1. Claims 1, 3, 5-13, and 16 are allowed.
2. As to claim 1, Furusawa et al. (U.S. Patent 5,050,227) discloses an image processor for use in drawing an image to a memory having a two dimensional matrix of pixel drawing regions (Fig. 1, 9), each of the pixel drawing regions representing a single pixel in the image, said image processor comprising: a plurality of relative orientation detection filters each representing a distinguishing feature of a relative orientation of an edge segment to be drawn to the memory (Fig. 8, 81a-d), drawing means for drawing the image to the memory or a buffer having the same structure as the memory (fig. 1, S10), detection means for automatically detecting a connected sequence of pixel drawing regions making up an edge in the image drawn by said drawing means by applying an edge detection filter (Fig. 2, S6; col. 4, line 64-col. 5, line 10), and detecting the relative orientation of the connected sequence of pixel drawing regions by means of selecting out one relative orientation detection filter representing the distinguishing feature that is closest to the distinguishing feature of the connected sequence of pixel drawing regions in question (Fig. 2 S6-S7), and smoothing means for smoothing a pixel value of each pixel in the connected sequence of pixel drawing regions on the edge using smoothing coefficients (Fig. 2, S8) the smoothing coefficients being either computed depending on the relative orientation detected by said detection means or obtained from outside.

Furusawa et al. further discloses that a plurality of relative orientation detection filters is a two-dimensional matrix of predetermined orientation coefficients, the orientation coefficients including zero orientation coefficients each having a value of zero and non-zero orientation coefficients each having a value other than zero, the non-zero orientation coefficients being aligned relative to each other in a predetermined direction (Fig. 4a-d), said detection means performing convolution of all orientation coefficients contained in said relative orientation detection filters (Fig. 8), with each pixel value of the connected sequence of pixel drawing regions making up the edge, said detection means then selecting out one relative orientation detection filter for which the convolution result in a single direction exceeds a predetermined threshold value and yields the largest result (Column 5, lines 43-55), as the relative orientation filter having the distinguishing feature that is closest to the distinguishing feature in the subject direction (Fig. 4a-d, shows the direction they are relative to).

The claims further recite selecting out a predetermined number of relative orientation detection filters each representing a distinguishing feature that is closer to the distinguishing feature of the connected sequence of pixel drawing regions. Furusawa discloses this, at Fig. 2 S6-S7 and col. 5, line 66-col. 6, line 55. It is noted that, in the Furusawa reference, the predetermined number of filters is "one" since a single filter that best matches an orientation is selected out and used. The claims further recite performing interpolation with the relative orientations specified by the selected relative orientation detection filters, which is further disclosed by Furusawa at

col. 6, lines 39-55. This portion of Furusawa discusses a weighting and adding operation using the relative orientation filter, which reads on an interpolation.

Neither Furusawa, nor any reference combinable with Furusawa discloses selecting out a predetermined number of relative orientation detection filters for which their respective convolution results in a single direction exceed a predetermined threshold and yield the largest result, the second largest result, and the third largest result, respectively as the relative orientation filters having their respective distinguishing features that are closer to the distinguishing feature in the subject direction, and distributing, using interpolation, the relative orientations specified by the selected relative orientation detection filters, thereby determining one relative orientation.

Shin (U.S. Patent 7,027,065) discloses classifying textures by filtering input images using different orientation coefficients and using a threshold to pick orientation and scale coefficients that can be used to describe the texture (col. 2, lines 23-59). The orientation coefficients picked are the two orientation coefficients that best represent the structured-ness of the texture (col. 8, lines 11-19). However, one key difference between Shin and the instant claims is that there is no attempt to combine the orientation coefficients in Shin. Because Shin filters an entire texture image, rather than just one edge within the image, a combination of the orientation coefficients would actually destroy the invention of Shin. For example, say that the invention of Shin was working on a texture that was structured in the 0 and 90 degree orientations, such as the bricks and spaces between the bricks in the upper left hand corner of fig. 3. A

combination of the 0 and 90 degree filter coefficients would yield a 45 degree filter coefficient, which would not at all capture the structured-ness of the bricks. One skilled in the art would not combine the concepts in the Furusawa and Shin inventions without some sort of teaching that applied the image filtering technique of Shin with the edge filtering technique of Furusawa. Lacking that teaching, to combine these references into applicant's claimed invention would require impermissible hindsight reasoning by the examiner.

3. The following is an examiner's statement of reasons for allowance:

As to claim 1, the prior art does not disclose selecting out a predetermined number of relative orientation detection filters for which their respective convolution results in a single direction exceed a predetermined threshold and yield the largest result, the second largest result, and the third largest result, respectively as the relative orientation filters having their respective distinguishing features that are closer to the distinguishing feature in the subject direction, and distributing, using interpolation, the relative orientations specified by the selected relative orientation detection filters, thereby determining one relative orientation, along with the other limitations of claim 1.

4. The other independent claims include similar features to those of claim 1 and, therefore, the above analysis applies to them as well.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."



Any inquiry concerning this communication or earlier communications from the examiner should be directed to AARON M. RICHER whose telephone number is (571)272-7790. The examiner can normally be reached on weekdays from 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aaron M Richer/  
Examiner, Art Unit 2628  
5/13/09